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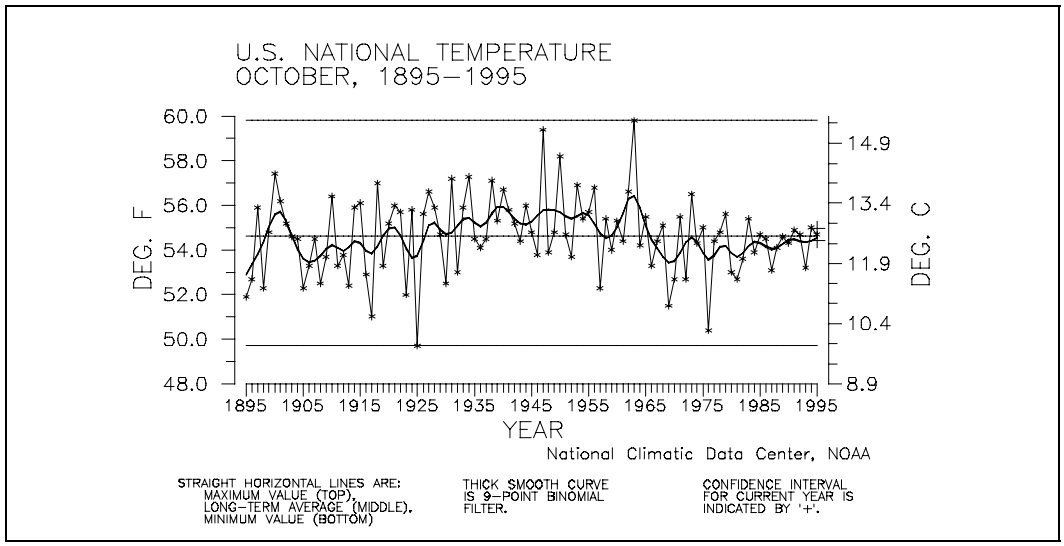
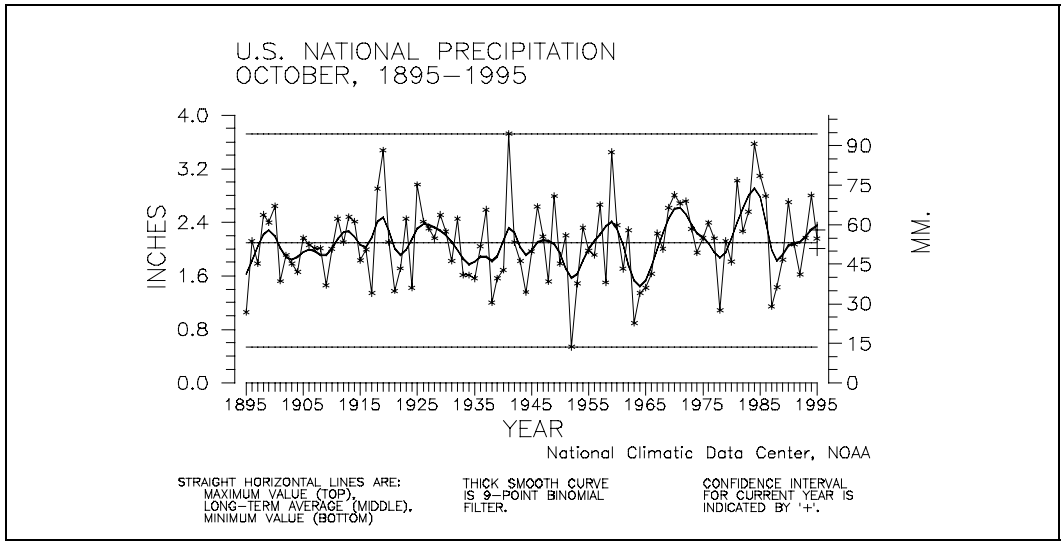
CLIMATE VARIATIONS BULLETIN





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This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Analysis Center, and preliminary tornado statistics obtained from the NWS National Severe Storms Forecast Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), the hurricane datasets (TD-9636 and TD-9697), the tornado dataset (STORM DATA), and the monthly station dataset (LCD supplemental files). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

The narrative, tables, and graphs in the CVB are also available via automated facsimile. The previous month's summary can be obtained after the tenth of the month by dialing 704-271-4570 and selecting the appropriate menu codes. A touch-tone fax machine is required.

If you have access to the Internet, copies of the CVB are available via both the NCDC's World Wide Web (WWW) server and the NCDC's anonymous FTP server.

NCDC's WWW server
URL for the CVB: http://www.ncdc.noaa.gov/publications/cvb/cvb.html

NCDC's anonymous FTP server
Machine: ftp.ncdc.noaa.gov
Directory: /pub/data/cvb

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 704-271-4994 or fax a letter to 704-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 704-271-4800 or sending a fax to 704-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES OCTOBER CLIMATE IN HISTORICAL PERSPECTIVE

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Preliminary data for October 1995 indicate that temperature averaged across the contiguous United States was at the long-term mean (see Figure 1). October 1995, with an averaged temperature of 54.7° (F), ranked as the 50th coolest October since national records began in 1895. The 1995 value is based on preliminary data, which has been shown to be within 0.26°F (0.14°C) of the final data over a 46-month period. This confidence interval is indicated in the figure by '+'. The darker smooth curve is a nine-point binomial filter that averages out the year-to-year fluctuations and shows the longer-term variations. Roughly five percent of the country averaged much cooler than normal while an additional six percent of the country averaged much warmer than normal for October 1995.

With an areally-averaged national precipitation value of 2.15 inches, October 1995 was the 47th wettest October on record. The preliminary value for precipitation is estimated to be accurate to within 0.14 inches (3.56 millimeters) and the confidence interval is plotted in Figure 2 as a '+'. Nearly a third (29.8%) of the country experienced much drier than normal conditions while 12.8% was much wetter than normal.

Historical precipitation is shown in a different way in Figure 3. The October precipitation for each climate division in the contiguous U.S. was first standardized using the gamma distribution over the 1931-90 period. These gamma-standardized values were then weighted by area and averaged to determine a national standardized precipitation value. These national weighted values were then normalized over their period of record. Negative values are drier and positive values are wetter than the mean. This index gives a more accurate indication of how precipitation across the country compares to the local normal (60-year average) climate. The national standardized precipitation ranked October 1995 as the 17th driest such month on record.

In order to show more of a historical perspective, the precipitation and temperature rankings for the periods October 1995, September-October 1995, May-October 1995, and November 1994-October 1995 for the nine climatically homogeneous regions, as well as the national rankings, are listed in Table 1.

The regional rankings for temperature for the month of October indicate that temperatures were warmer than normal for the eastern seaboard and cooler than normal for the Northwestern quarter of the country. It was the tenth warmest October on record for the Northeast region (Figure 11) and the 29th warmest October for the Southeast region. It was the 17th coolest October for the Northwest region (Figure 12) and the 25th coolest October for the West-North Central region.

October 1995 was the seventh wettest such month on record for the Northeast region (Figure 13) and the eighth wettest for the Southeast. These wetter than normal rankings were the result, in part, of the remnants of Hurricane Opal moving rapidly northward up the Appalachian Mountain chain earlier in the month. This along with an active storm track helped alleviate serious short-term drought conditions in the Northeast region. However, long-term drought conditions still exist for a majority of the region. October 1995 was the second driest such month on record for the Southwest region and the third driest for the West (Figure 14). It was the second driest two-month period for the West region; however, for the twelve-month period, the West region states of California and Nevada experienced their second wettest such period on record.

National averaged temperature for the ten month period January-October for 1895-1995 is shown in Figure 4. The January-October 1995 temperature was above the long-term mean ranking as the 20th warmest such period since 1895. For the year-to-date, none of the country has averaged much cooler than normal while 8.3% of the country has averaged much warmer than normal.

Figure 5 shows the historical January-October national averaged precipitation. The year-to-date for 1995 was the tenth wettest such ten-month period since records began. Four of the last seven January-October periods averaged above, to much above normal. For the year-to-date, 1.3% of the country has averaged much drier than normal while nearly thirteen percent of the country has averaged much wetter than normal. When the local normal climate is taken into account, January-October 1995 ranked as the 16th wettest such period since 1895 (Figure 6).

Figure 7A shows, in illustrative map form, the October 1995 temperature rankings for the 48 contiguous states. No state was within the top ten coolest category of the historical distribution for the month of October while ten states were within the cool third of the distribution. It was the sixth warmest October on record for New Hampshire and Vermont and the seventh warmest October for Maine and Rhode Island. October 1995 was the eighth warmest such month on record for New York. Fifteen other states were within the top ten warmest category of the distribution.

October 1995 state ranks for precipitation are shown in Figure 7B. It was the driest October on record for California, second driest for New Mexico, third driest for Kansas, fourth driest for Colorado and Nevada, fifth driest for Missouri, eight driest for Utah and ninth driest for Arizona. Four other states were within the dry third of the historical distribution. Ten states were within the top ten wet portion of the distribution including the wettest October on record for New Hampshire, the third wettest October for Connecticut, and the fourth wettest for Massachusetts and Vermont. Seventeen other states were within the wet third of the historical distribution. It must be stressed that, when the final values for precipitation are calculated, these ranks *WILL* change due to the use of a denser station network. ***It should also be noted that the October state precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.***

State temperature and precipitation ranks for the ten-month period, January-October 1995, are shown in map form in Figures 8A and 8B. Four states (MD, NH, NJ, & RI) were within the top ten warm category while an additional 25 states were within the warm third of the distribution. No states were within the cool third of the historical distribution (Figure 8A). It was the third wettest year-to-date for Idaho, California, and South Dakota, the seventh wettest such period for Colorado, the eighth wettest for Nevada and Utah and the ninth wettest such ten-month period for Oregon. Fourteen other states were within the wet third of the distribution for the year-to-date. No state was within the top-ten driest for the year-to-date and only nine states were within the dry third of the historical distribution for the January through October period (Figure 8B).

Long-term drought coverage in the United States during October remained roughly the same as September while the area of the country experiencing severe to extreme wettness dropped nearly ten percent. Nationally, long-term drought conditions (as defined by the Palmer Drought Index) for October 1995 increased to 2.5% of the country while the percent coverage of severe to extreme wet area fell to about a fifth of the country (Figure 9). Table 2 lists the precipitation ranks and statistics for selected river basins for the 1994-1995 Hydrologic Year. The core wet areas included the northern and central Great Plains, northern and central High Plains, the northern and central Rockies, the Great Basin, the interior Northwest, northern California, and portions of the Southeast. The Palmer dry areas included portions of the Northeast region, northwestern Arizona and parts of the southern High Plains, and lower and mid Mississippi valley regions.

Table 3 shows extremes, 1961-90 normals, and the October 1995 values for both precipitation and temperature for the nine regions and the contiguous U.S.

Precipitation across the Primary Hard Red Winter Wheat Belt for the first month of the growing season averaged much below normal for October 1995. Eight of the last nine such months have been below, to much below normal (Figure 10).

According to preliminary data from the National Weather Service's National Severe Storms Forecast Center, there were 41 tornadoes across the contiguous United States in October 1995. The 1953-1994 average tornado count for October is 25. Extremes for October include a minimum of 1 tornadoes in 1987 and a maximum of 55 in 1993. For the year-to-date, 1116 tornadoes have occurred. The January-October long-term average is 751. The year-to-date extremes are 1149 in 1993 and 388 in 1953. It should be noted that the preliminary tornado count is generally higher than the final count and that observations have generally improved with time.

TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1995. 1 = DRIEST/COLDEST, 101 = WETTEST/WARMEST FOR OCTOBER 1995, 101 = WETTEST/WARMEST FOR SEP-OCT 1995, 101 = WETTEST/WARMEST FOR MAY-OCT 1995, 100 = WETTEST/WARMEST FOR NOV 1994-OCT 1995.

REGION	OCT 1995	SEP-OCT 1995	MAY-OCT 1995	NOV 1994-OCT 1995
PRECIPITATION:				
NORTHEAST	95	88	34	15
EAST NORTH CENTRAL	83	50	62	69
CENTRAL	63	23	77	59
SOUTHEAST	94	81	89	71
WEST NORTH CENTRAL	80	73	91	92
SOUTH	17	36	55	67
SOUTHWEST	2	27	48	78
NORTHWEST	50	45	78	65
WEST	3	2	69	99
NATIONAL	55	38	80	88
TEMPERATURE:				
NORTHEAST	92	70	85	94
EAST NORTH CENTRAL	47	35	66	89
CENTRAL	63	36	56	87
SOUTHEAST	73	62	67	88
WEST NORTH CENTRAL	25	35	32	68
SOUTH	46	37	32	74
SOUTHWEST	48	58	36	77
NORTHWEST	17	57	46	74
WEST	69	86	46	62
NATIONAL	50	51	49	89

TABLE 2.
STATISTICS FOR SELECTED RIVER BASINS: PRECIPITATION RANKING FOR OCTOBER 1995, WHERE RANK OF 1 = DRIEST, 101 = WETTEST, BASED ON THE PERIOD 1895 TO 1995, AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF OCTOBER 1995.
RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	PRECIPITATION RANK	% AREA DRY	% AREA WET
MISSOURI BASIN	41	.0%	61.3%
PACIFIC NORTHWEST BASIN	56	.0%	35.0%
CALIFORNIA RIVER BASIN	2	.0%	42.1%
GREAT BASIN	5	.0%	61.0%
UPPER COLORADO BASIN	4	.0%	6.6%
LOWER COLORADO BASIN	8	10.4%	.0%
RIO GRANDE BASIN	18	18.3%	3.9%
ARKANSAS-WHITE-RED BASIN	4	.0%	9.5%
TEXAS GULF COAST BASIN	19	.0%	19.4%
SOURIS-RED-RAINY BASIN	90	.0%	41.0%
UPPER MISSISSIPPI BASIN	60	.0%	19.4%
LOWER MISSISSIPPI BASIN	34	.0%	.0%
GREAT LAKES BASIN	88	.0%	.0%
OHIO RIVER BASIN	74	.0%	.0%
TENNESSEE RIVER BASIN	95	.0%	39.6%
NEW ENGLAND BASIN	99	28.2%	4.5%
MID-ATLANTIC BASIN	96	7.1%	.0%
SOUTH ATLANTIC-GULF BASIN	95	.0%	18.7%

TABLE 3. EXTREMES, 1961-90 NORMALS, AND 1995 VALUES FOR OCTOBER

PRECIPITATION (INCHES)

REGION	DRIEST VALUE	DRIEST YEAR	WETTEST VALUE	WETTEST YEAR	NORMAL PCPN	1995 PCPN
NORTHEAST	.44	1924	6.27	1990	3.35	5.80
EAST NORTH CENTRAL	.25	1952	4.66	1984	2.47	3.05
CENTRAL	.53	1963	7.15	1919	3.04	3.00
SOUTHEAST	.53	1963	7.33	1959	3.16	5.56
WEST NORTH CENTRAL	.13	1952	2.72	1946	1.09	1.40
SOUTH	.12	1952	7.07	1984	2.89	1.46
SOUTHWEST	.02	1952	3.67	1972	1.12	.15
NORTHWEST	.14	1987	5.20	1950	2.05	2.09
WEST	.01	1917	2.86	1962	1.01	.09
NATIONAL	.54	1952	3.72	1941	2.16	2.15

TEMPERATURE (DEGREES F)

REGION	COLDEST VALUE	COLDEST YEAR	WARMEST VALUE	WARMEST YEAR	NORMAL TEMP	1995 TEMP
NORTHEAST	42.7	1925	56.0	1947	48.9	53.0
EAST NORTH CENTRAL	37.5	1925	57.6	1963	47.8	47.7
CENTRAL	48.2	1917	62.9	1947	55.2	56.7
SOUTHEAST	58.2	1987	72.8	1919	63.4	65.5
WEST NORTH CENTRAL	35.5	1925	53.9	1963	45.9	44.1
SOUTH	56.7	1976	69.9	1947	63.4	63.9
SOUTHWEST	48.6	1984	59.4	1950	53.4	53.3
NORTHWEST	42.3	1919	53.9	1988	47.7	45.8
WEST	51.8	1916	62.1	1988	56.9	57.9
NATIONAL	49.7	1925	59.8	1963	54.4	54.7

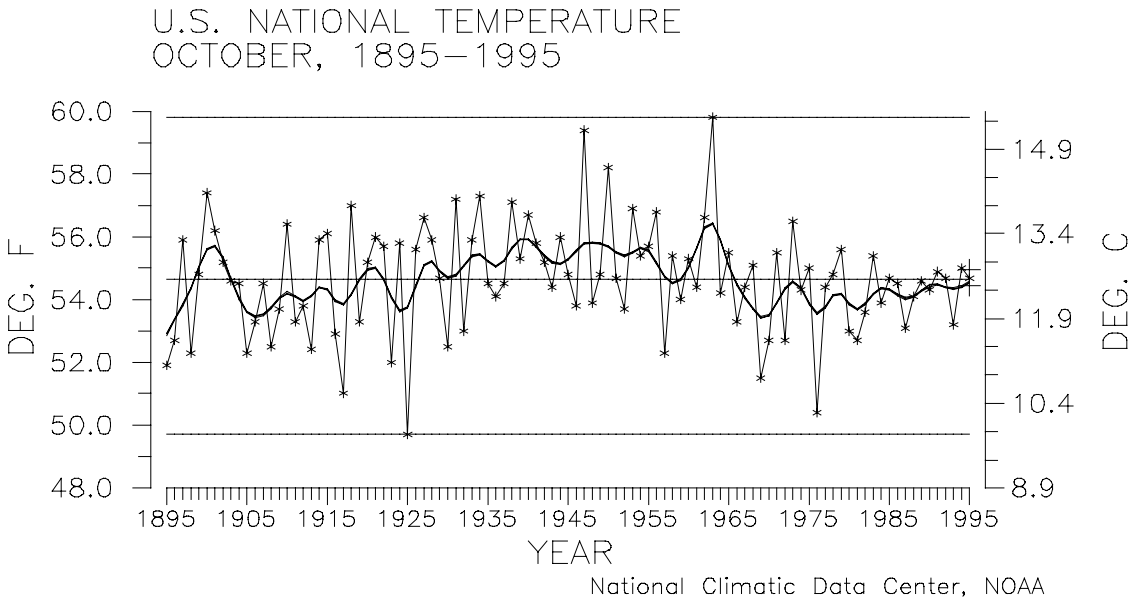


Figure 1

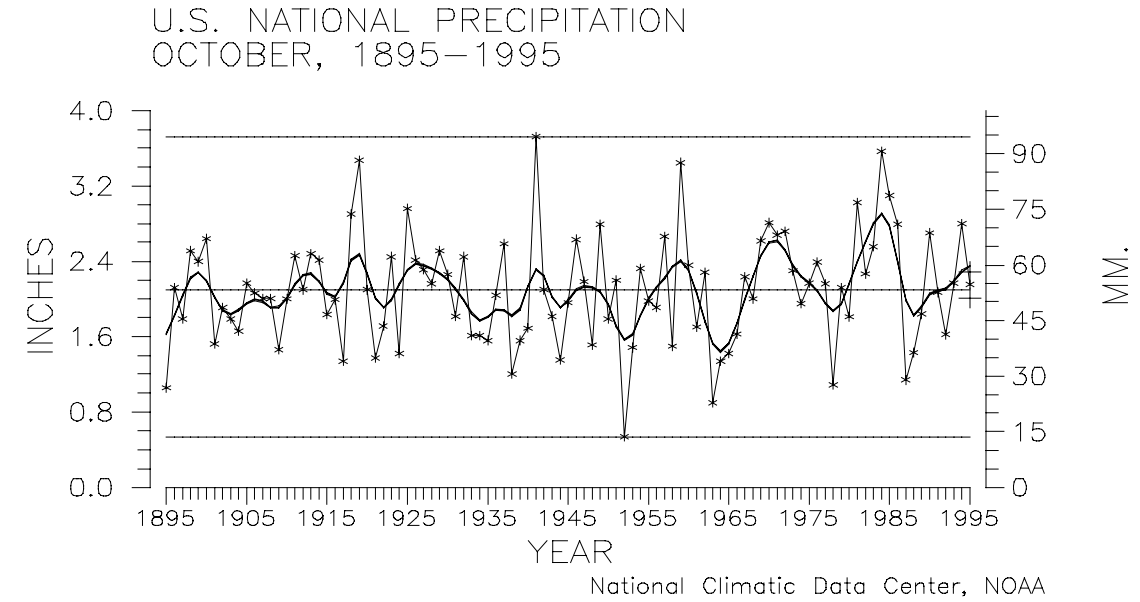


Figure 2

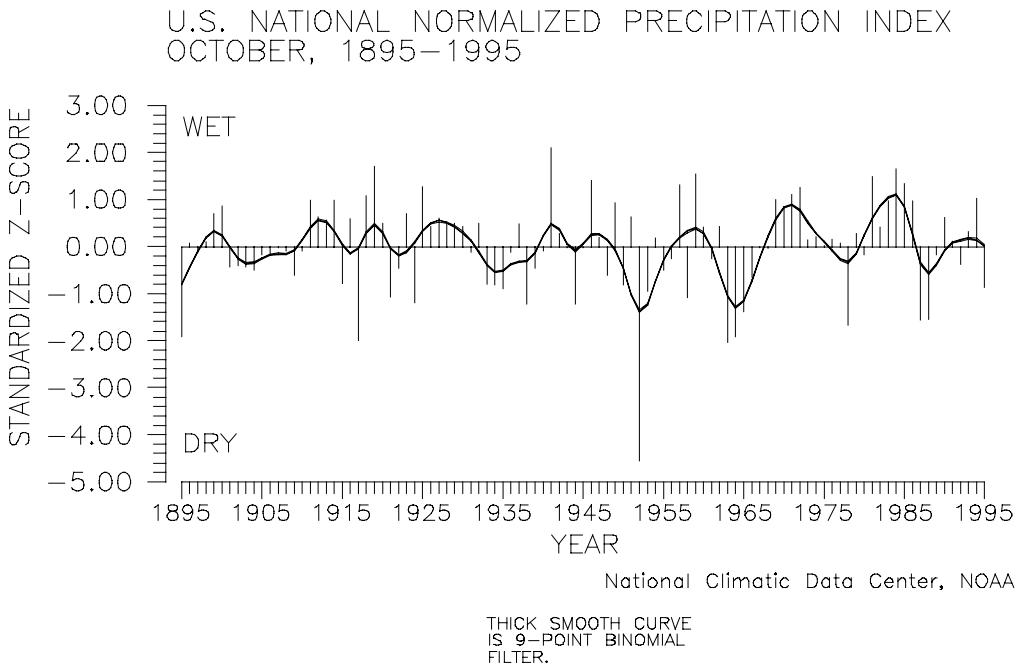


Figure 3

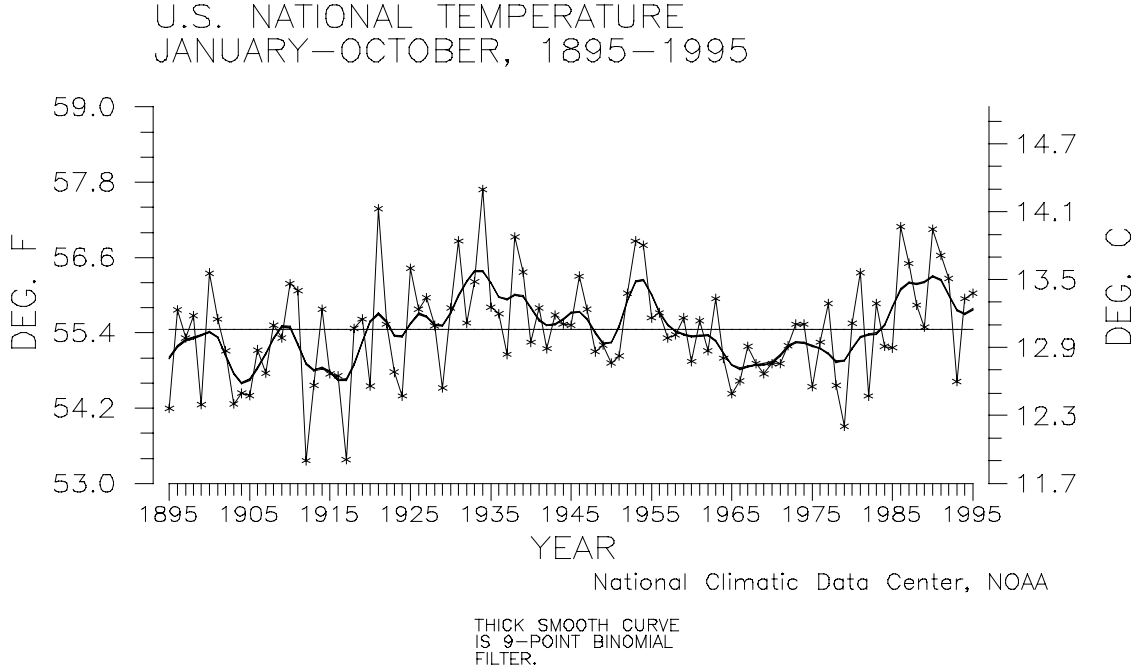
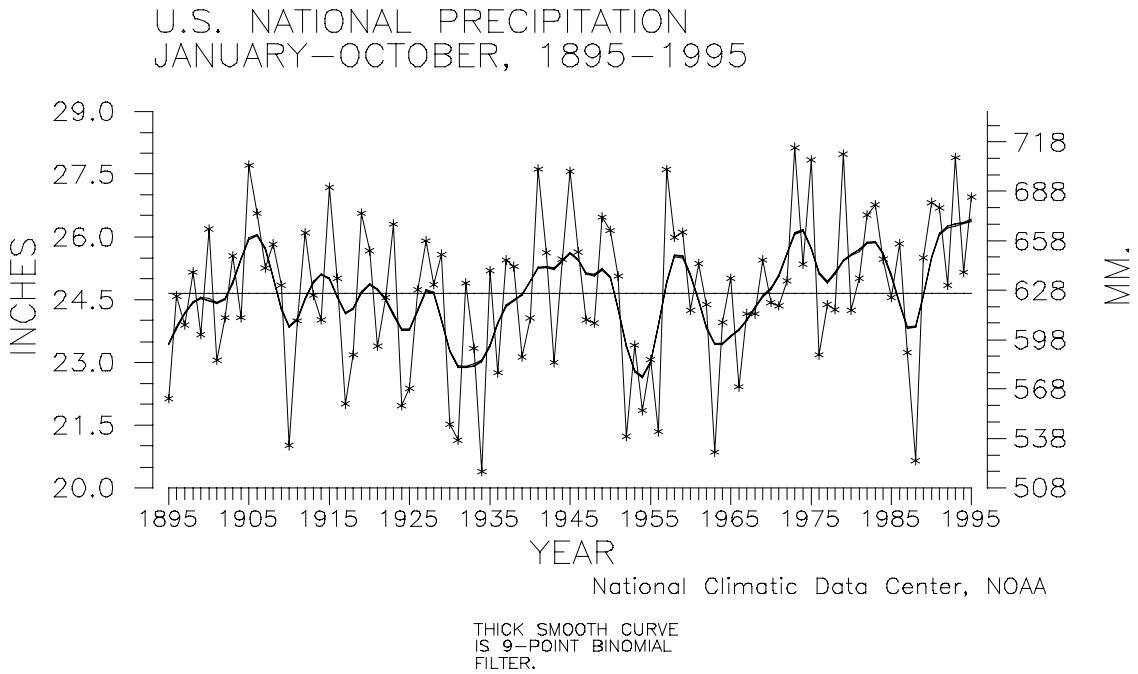


Figure 4



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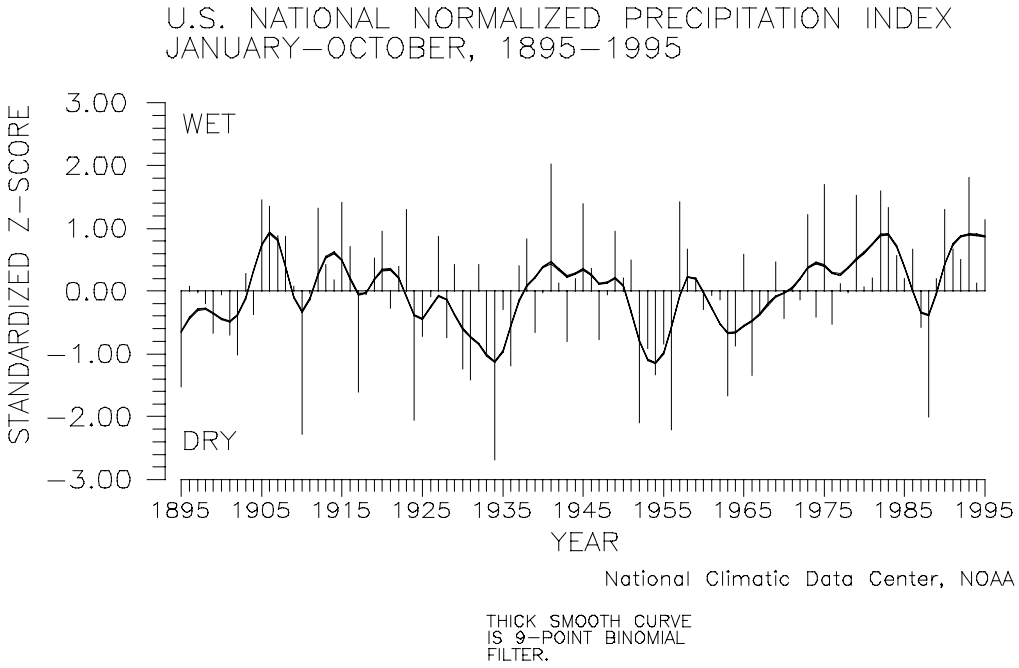


Figure 6

OCTOBER 1995 STATEWIDE RANKS

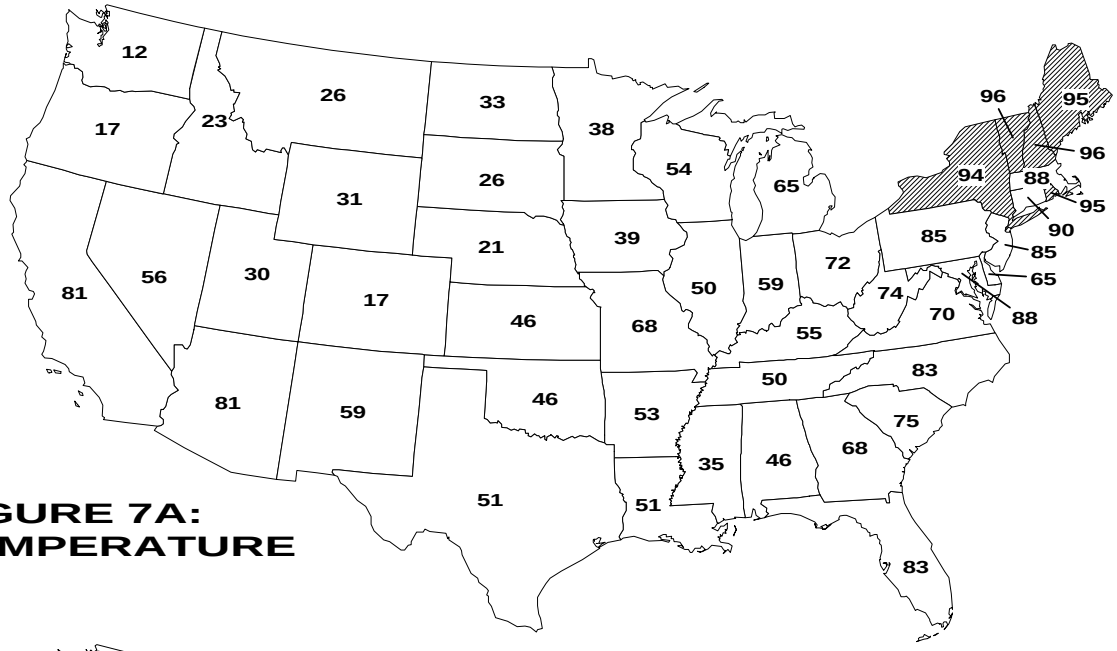


FIGURE 7A: TEMPERATURE

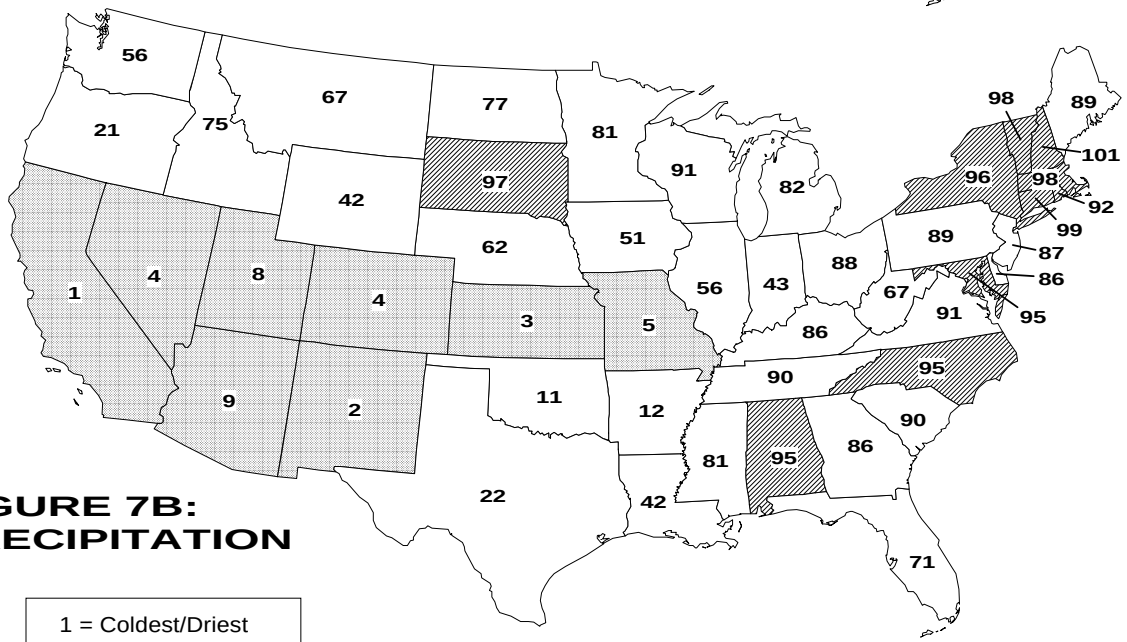


FIGURE 7B: PRECIPITATION

1 = Coldest/Driest
101 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 92-101) are shaded.

JAN-OCT 1995 STATEWIDE RANKS

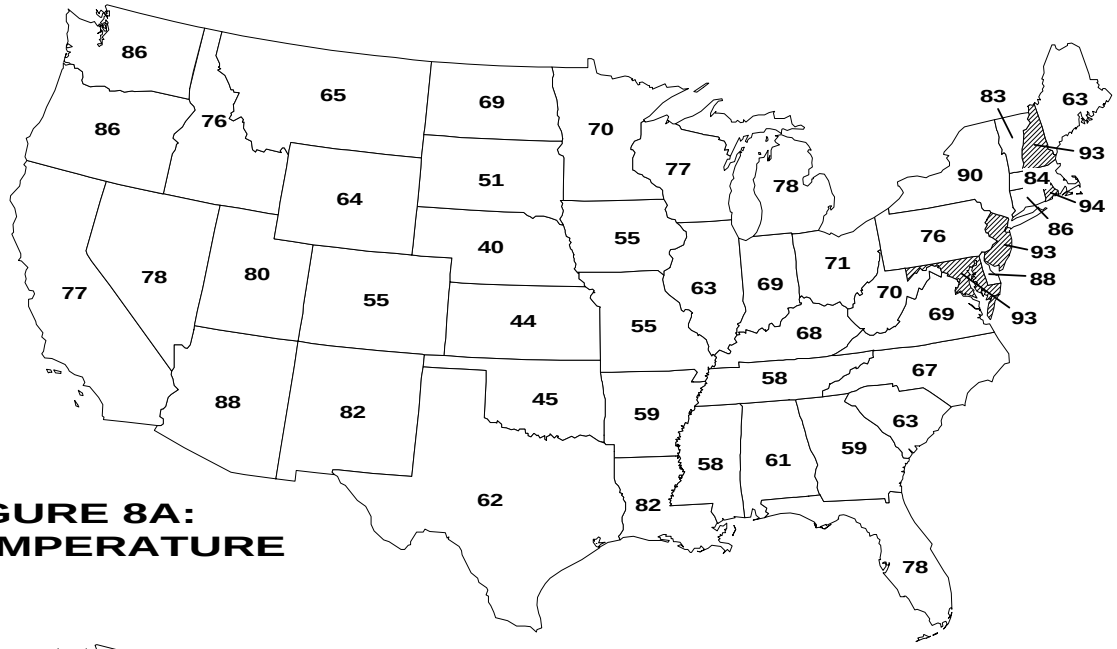


FIGURE 8A: TEMPERATURE

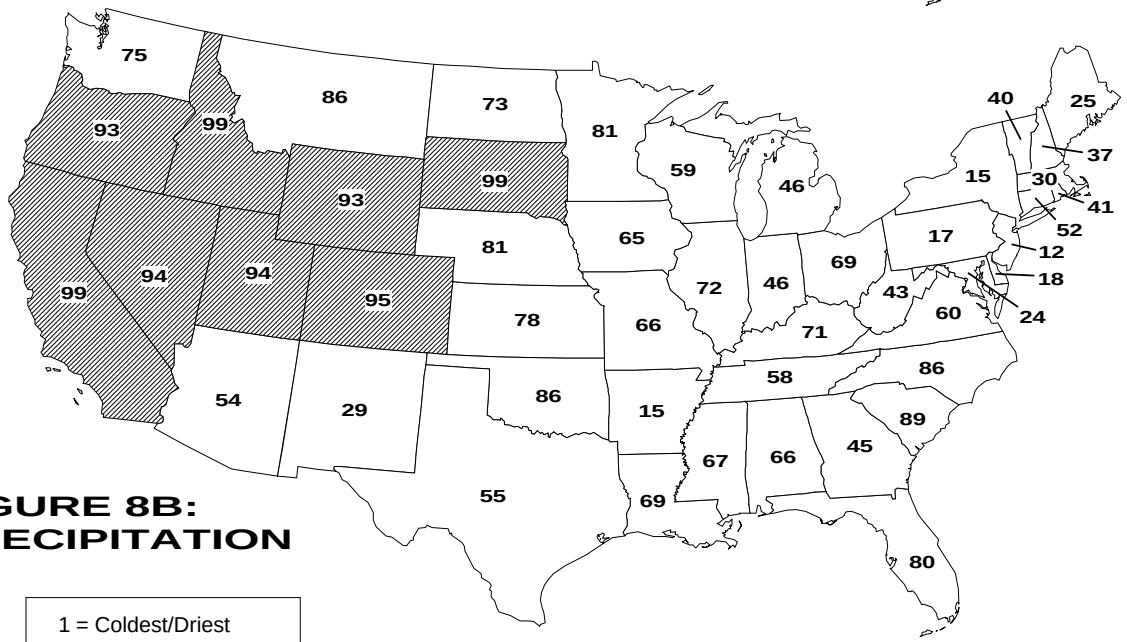


FIGURE 8B: PRECIPITATION

1 = Coldest/Driest
101 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 92-101) are shaded.

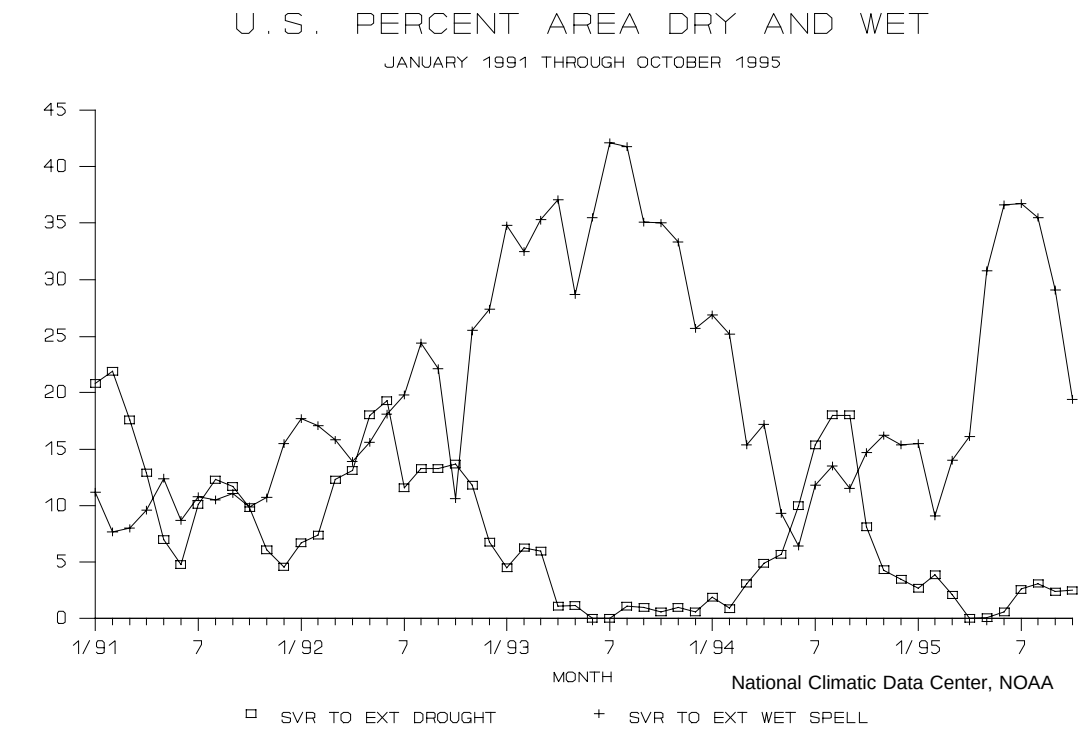


Figure 9

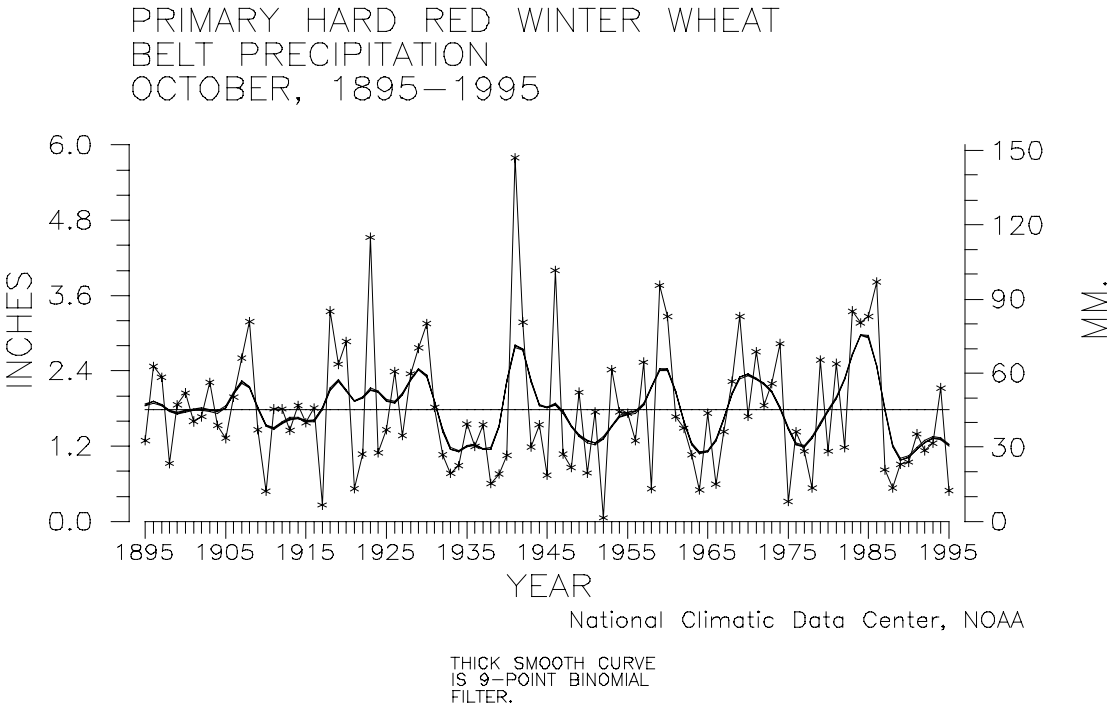
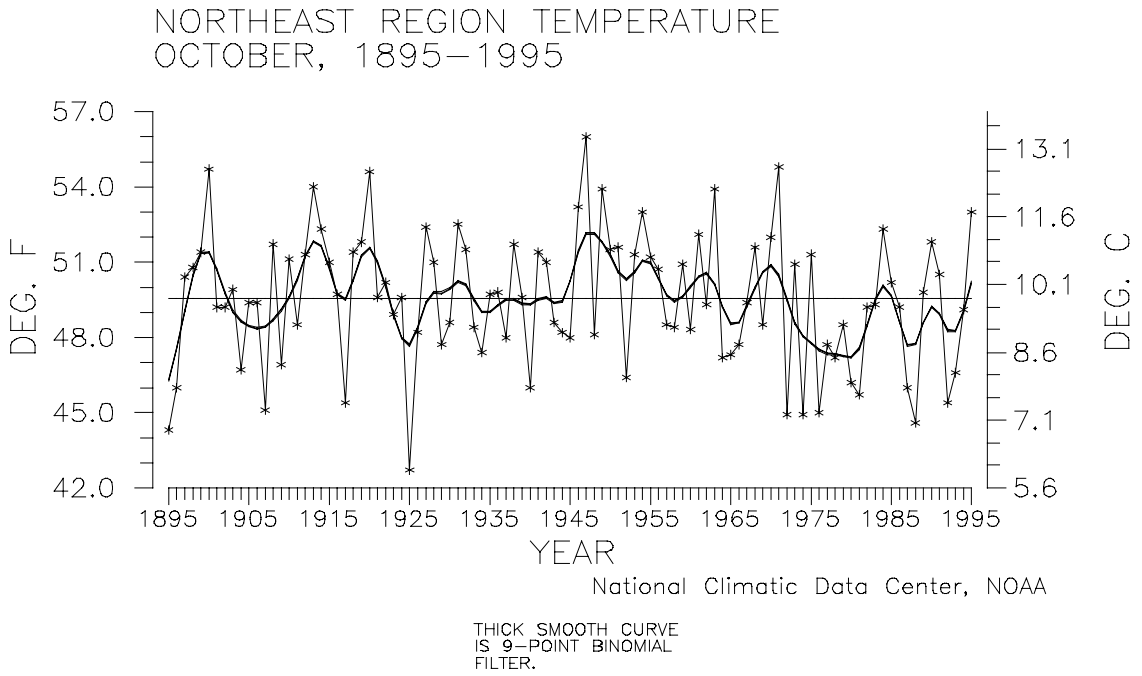


Figure 10



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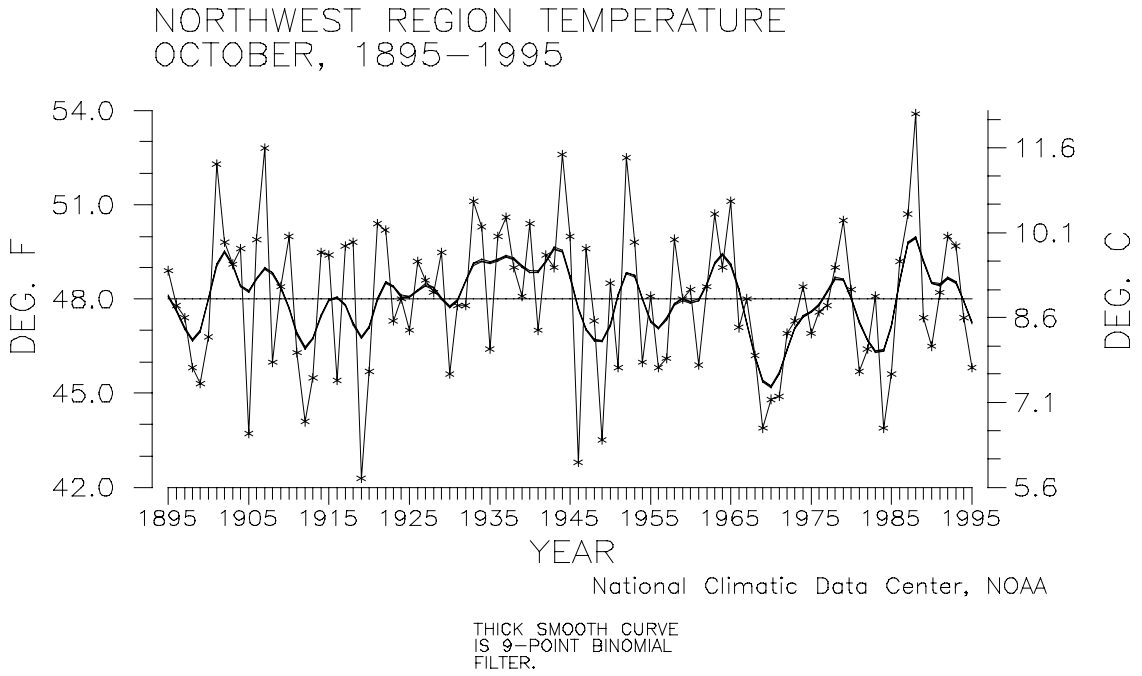

Figure 12

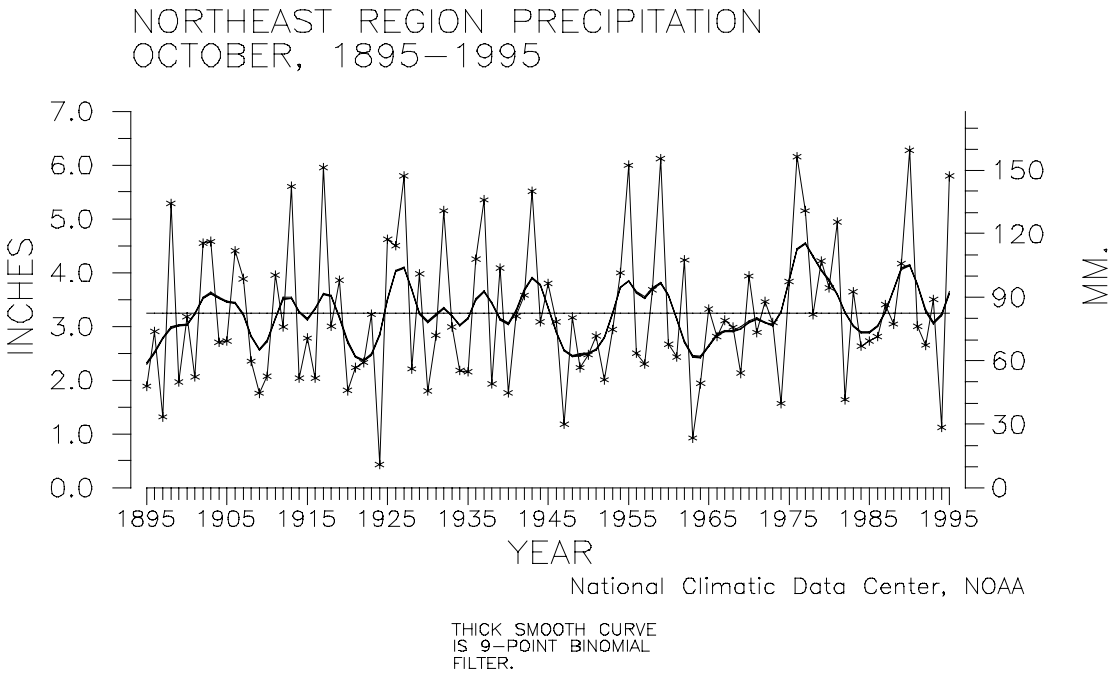

Figure 13

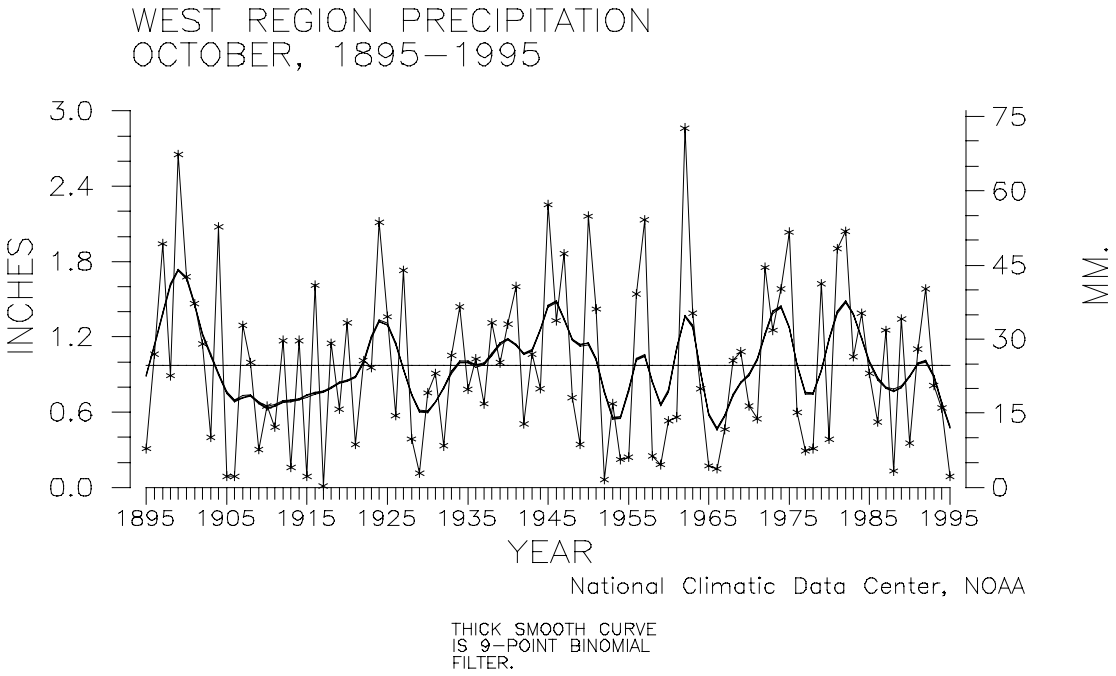

Figure 14